



4/30/03-02184

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866

APR 30 2003

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Mr. Sam D. Hamilton  
U.S. Department of the Interior (DOI)  
Regional Director  
Southeast Region  
USFWS  
1875 Century Blvd  
Atlanta, GA 30345

Re: Atlantic Fleet Weapons Training Facility (AFWTF) - EPA I.D.# PRD980536221  
Munitions and Explosives of Concern (MEC) Investigation Report for Blue  
Beach and Red Beaches

Dear Mr. Hamilton:

The United States Environmental Protection Agency (EPA) Region 2 has reviewed the April 2003 "Final Draft Preliminary Munitions and Explosives of Concern (MEC) Investigation Report for Red and Blue Beaches" (the Report). Blue and Red Beaches are located in the Eastern Maneuver Area of Vieques Island. As you know, based on preliminary comments on the Report provided to the Navy and DOI by EPA, as well as by the Puerto Rico Environmental Quality Board (EQB), the Navy implemented additional MEC investigation work at Blue and Red beaches between April 26 through April 29, 2003.

Based on the results of that additional MEC investigation work, EPA concurs with the Navy's and DOI's recommendations that Blue and Red beaches can be opened for recreational usage. Our concurrence is based on:

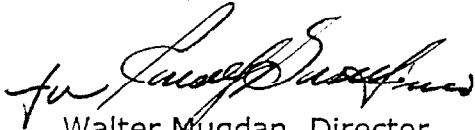
- a) the largely negative findings [only 1 clearly military item found, and it was wholly inert] during the "reacquisition" to 4 feet below ground surface of 30% of the geophysically identified anomalies that, based on the previous "reacquisition," were determined to be deeper than 1 foot below ground surface;
- b) the wholly negative findings of the underwater visual inspection by divers for any possible sea-bottom MEC related surface items in the waters to approximately 4 - 5 foot depth; and

- c) implementation of access restrictions [and warning signs] for the uninvestigated areas behind the beach.

However, access restrictions should be maintained for the land areas behind the beaches, pending implementation of additional MEC investigations of those areas.

If you have any questions, please telephone either Mr. Carlos Ramos, of Region 2's Office of the Regional Administrator, at (212) 637 - 3588, or Mr. Tim Gordon, EPA's designated Project Coordinator for the RCRA Order, at (212) 637 - 4167.

Sincerely,



Walter Mugdan, Director  
Division of Environmental Planning and Protection

cc: Captain John R. Warnecke, Commanding Officer, U.S. Naval Station  
Roosevelt Roads  
Christopher T. Penny, Naval Facilities Engineering Command  
John Seymour, U.S. Department of the Interior [via Fax]  
Shelly Hall, U.S. Department of the Interior [via Fax]  
Bud Oliviera, U.S. Department of the Interior, Fish & Wildlife Service [via Fax]  
Felix Lopez, U.S. Department of the Interior, Fish & Wildlife Service [via Fax]  
Esteban Mujica-Cotto, President, PR Environmental Quality Board (PREQB)  
Yarissa Martinez, Office of the Chairman, PREQB [via Fax]

**DRAFT**

April 22, 2003

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

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Mr. Christopher T. Penny  
Project Coordinator  
Installation Restoration Section (South)  
Environmental Program Branch  
Environmental Division,  
Atlantic Division (LANTDIV), Code 182  
Naval Facilities Engineering Command  
1510 Gilbert Street  
Norfolk, VA 23511-2699

Re: Atlantic Fleet Weapons Training Facility (AFWTF) - EPA I.D.#  
PRD980536221

Munitions and Explosives of Concern (MEC) Investigation Report for Blue Beach  
and Red Beaches

Dear Mr. Penny:

The United States Environmental Protection Agency (EPA) Region 2 has received a copy of the April 2003 "Final Draft Preliminary Munitions and Explosives of Concern (MEC) Investigation Report for Blue Beach and Red Beaches" (the Report). Blue Beach and Red Beaches are located in the Eastern Maneuver Area of Vieques Island. EPA received the Report with a copy of the March 31, 2003 transmittal letter from Mr. Martin Clausen [of your consultant CH2MHill] to yourself. This letter is addressed to you as the Navy's designated Project Coordinator, pursuant to Section IX of the January 2000 RCRA 3008(h) Order on Consent (the Order) between the Navy and EPA (the Order).

As you know, EPA was not advised of these investigations, nor did we receive a copy of the work plan for the investigations until December 10, 2002, which was after the investigations had already commenced on December 2, 2002. As a result, the investigations were not implemented pursuant to an EPA approved work plan.

The November 2002 "Final Preliminary OE/MEC [Ordnance and Explosives/Munitions and Explosives of Concern] Site Investigation Work Plan for Blue Beach and Red Beaches" (the Work Plan) indicated in Section 1.1 (Background) that: "The current legislation calls for the property...to be transferred to the Department of the Interior (DOI) and be managed as a federal wildlife refuge by the U.S. Fish & Wildlife Service (FWS)." Also in Section

1.3.3 (Land Use) it is stated that the area would be turned over to the DOI on May 1, 2003 and: "...after which it will be operated as a wildlife refuge." There was no discussion in either section, indicating that the beaches were expected to be used for recreational usage, or that the purpose of the Work Plan was to establish that Blue Beach and Red Beaches were safe for recreational usage, after May 1, 2003. In addition, it should be noted that the recommendations given in Section 4.2 of the Report state that "The Preliminary MEC Site Investigation **was planned and executed in accordance with the intended land use for Red and Blue Beach as a wildlife refuge.**" [emphasis added here.]

In the Report, the Navy has stated that Blue and Red beaches were never used for live fire training. EPA cannot judge the accuracy of that as the Navy has never submitted its Archive Records Search (ARS) and Preliminary Range Assessment (PRA) to EPA. Also EPA understands that the Navy has represented that the two beaches are safe for recreational usage. Since the results of the investigation were used to confirm that the beaches were safe, additional MEC investigation work should have been proposed and implemented, including:

- 1) "re-acquisition"[i.e. excavation] of geophysically identified anomalies to a depth greater than one foot below ground surface;
- 2) investigation of Blue and Red beaches for possible MEC beyond the low-tide line, i.e., in the water; and
- 3) investigation of the land areas adjacent to, and readily accessible from, Blue and Red beaches.

If EPA performed the investigation to demonstrate that Blue and Red beaches are safe for recreational usage, EPA would have, at a minimum, recommended implementation of the additional MEC investigation work discussed above.

In addition, the Navy has consistently asserted that the Red and Blue Beach MEC investigations were not subject to EPA oversight under the January 2000 Order [most recently in your April 8, 2003 letter to me]. As discussed originally in my letter of February 5, 2003 to you, EPA does not agree. Section VI.A of the Order requires actions for newly discovered releases [of hazardous waste or constituents] at or from the Facility, including submission of a work plan to EPA. In your April 8<sup>th</sup> letter, you indicated that the MEC investigation was not prompted by any information concerning releases, and therefore the requirements of Section VI.A of the Order were not triggered.

This view no longer seems tenable. EPA maintains that the Navy's obtaining or discovering the presence of the ordnance-related scrap (ORS), including, among other things 19 expended small arms cartridges and 3 fragments of expended

smoke grenades, as well as the abundant non-ORS metal and debris, constitutes obtaining or discovering information concerning a release of hazardous waste (as defined in 42 U.S.C. 6903(5)) or hazardous constituents, triggering the provisions of Section VI.A.

EPA also has several additional comments on the April 2003 Investigation Report, which are given in the enclosure to this letter. EPA is prepared to provide a more detailed discussion [than is contained in the enclosure] as to what it would consider an acceptable investigation to more conclusively demonstrate that Red and Blue beaches are reasonably expected safe for recreational usage if the Navy revises the Report to indicate that it is prepared to consider undertaking additional MEC investigations at Red and Blue beaches.

In conclusion, EPA has determined that the MEC investigations discussed in the April 2003 report have not been sufficiently thorough for EPA to concur with the conclusions in the report.

If you have any questions, please telephone Mr. Tim Gordon, EPA's designated Project Coordinator for the Order, at (212) 637 - 4167.

Sincerely yours,

Walter Mugdan, Director  
Division of Environmental Planning and Protection

Enclosure

cc: Captain John R. Warnecke, Commanding Officer, U.S. Naval Station  
Roosevelt Roads, with encl.  
John Seymour, U.S. Department of the Interior, with encl. [via Fax]  
Shelly Hall, U.S. Department of the Interior, with encl. [via Fax]  
Bud Oliviera, U.S. Department of the Interior, Fish & Wildlife Service, with encl.  
[via Fax]  
Felix Lopez, U.S. Department of the Interior, Fish & Wildlife Service,  
with encl. [via Fax]  
Esteban Mujica-Cotto, President, PR Environmental Quality Board  
(PREQB), with encl.  
Yarissa Martinez, Office of the Chairman, PREQB [via Fax], with encl.  
Martin Clasen, CH2MHill, with encl.

3 bcc Jane Kenny, 2RA, w/o encl.

William Muszynski, 2DRA, w/o encl  
Claudia McMurray, OSWER, w/o encl  
Jim Woolford, OSWER, with encl.  
Renee Wynn, OSWER, with encl.  
Doug Maddox, OSWER, with encl.  
Carl Soderberg, 2CEPD, with encl.  
Ron Borsellino, 2DEPP, w/o encl  
Eric Schaaf, 2ORC, w/o encl  
Carlos Ramos, 2ORA, with encl.  
George Pavlou, 2ERRD, w/o encl.  
Bonnie Bellow, 2PAD, w/o encl  
Steffine Bell, 2PAD, w/o encl  
Daniel Rodriguez, 2CEPD, with encl  
Bob Wing, 2ERRD, with encl.  
William Sawyer, 2ORC, w/o encl  
Gary Nurkin, 2ORC, w/o encl  
Adolph Everett, 2DEPP-RPB, w/o encl  
Dale Carpenter, 2DEPP-RPB, w/o encl  
Timothy Gordon, 2DEPP-RPB, with encl.  
RCRA File Room, 2DEPP-RPB, with encl.

## ENCLOSURE:

Additional EPA Comments on the April 2003 "Final Draft Preliminary Munitions and Explosives of Concern (MEC) Investigation Report for Blue Beach and Red Beaches"

### General Comments

1. As discussed below under Specific Comments #1 and #2, since the planned future usage of Red and Blue Beaches is for public recreation beaches, to be located inside the wildlife refuge area managed by the U.S. Department of the Interior (DOI), EPA believes that the clearance of MEC to only 1 foot below ground surface may not be sufficiently protective of human health and safety. In addition, the MEC investigations did not extend into the water; therefore, the safety of the areas beyond the low-tide line [i.e., the water] has not been determined.

2. Many anomalies were not investigated during the "re-acquisition" phase because it is stated in Appendix A of the "After Action Report" [the report on the "reacquisition" activities] by USA Environmental, which is Appendix B of the April 2003 Report [hereafter cited as "Appendix A"] that the anomalies are located "under an erosion control mat". The report needs to be revised to: a) describe what these "erosion control mats" consist of, their depth, when they were installed, and their expected structural life; b) discuss how it was determined that the anomalies are located beneath the erosion control mat instead of above it [it appears none were "re-acquired" [i.e., excavated]; c) give the total number of anomalies determined to be located under these "erosion control mats"; and d) discuss the safety implications of the presence of possible UXO at these anomalies, but apparently underneath these erosional control mats.

3. The majority of the anomalies successfully reacquired [i.e. the metal causing the anomaly was located] were found to be associated with non-MEC related metal, including much construction and ship related type items (such as steel bars, plates, posts, nails, bolts, anchors, chains, etc.), as well as general debris and liter. In order to better describe why the Navy concludes that the beaches are safe for public usage, the report should be revised to include a clearer discussion summarizing and quantifying the nature and totals of these non-MEC related metal items that were found by the investigation, as well as their percentage of the total "reacquired" items. In assessing overall beach safety, the report should also include a complete discussion of the significance of this high percentage of non-MEC related metal items "reacquired" above 1 foot below surface, in regards to likely conditions deeper than 1 foot below surface [the "re-acquisition" excavation depth]. In support of this analysis, the report should also include a

shells.

4. Also, to better describe why the Navy concludes that the beaches are safe for public usage, the report needs to be revised to include a summary and total as to the number of non-MEC related anomalies [based on non-MEC metal being found during “re-acquisition”, i.e., excavation] that were found to extend more than 12 inches below surface, but were then left in place [because they were non-MEC related], and whether there were any MEC related items that were found during “re-acquisition” which extended more than 12 inches below surface, but were then left in place [if any, then the report should discuss the number of items, and why they were left in place].

5. For anomalies listed in Appendix A, as “No find. Contact deeper than 1 foot.”, the report needs to make clear whether that means that the anomaly was excavated to a depth of 1 foot, but no metal object was found at that depth, or whether it means that based on geophysics alone the conclusion was made that the anomaly was below 1 foot depth, and no excavation was performed. Also, the report needs to clearly state how many anomalies and their percentage of the total anomalies are classified “No find. Contact deeper than 1 foot.” Furthermore, the report needs to include a full discussion of why the Navy concludes that the beaches are safe for public usage even though a large number [EPA counts 272 in Appendix A] of the anomalies are classified as “No find. Contact deeper than 1 foot.”

6. It is stated on page 3-2 of the report that “results of the test line prove-out revealed that the smallest munitions of interest (5.56 mm cartridge casings) do not contain sufficient mass to be detectable..... [and] The smallest potential MEC item of concern is the 20 mm projectile”. Since 19 of the 22 munitions related items found were 5.56 and 7.62 mm cartridge casings, the report needs include a discussion of whether for those 19 anomalies, there exists a potential for UXO/munitions to still be present below the 1 foot excavated [i.e., the found 5.56 and 7.62 mm cartridge casings are not considered to have caused the geophysical anomaly]. If that is in-fact the case then these 19 anomalies need to be added to the anomalies listed in Appendix A, as “No find. Contact deeper than 1 foot.”

7. The Introduction indicates that an Archive Records Search (ARS) and Preliminary Range Assessment (PRA) have been completed, and that they “...indicate that no live fire was used in these areas...”. EPA cannot judge the veracity of that assertion, since neither the ARS or PRA have been submitted to, or reviewed by, EPA.

8. Since the work was implemented between December 2, 2002 and December 20, 2002, under a work plan that had not been reviewed or approved by EPA, the Introduction Section of the report should be revised to make that clear.



9. It should be noted that the *Unexploded Ordnance (UXO) Management Principles for Implementing Responses Actions at Closed, Transferring, and Transferred Ranges* agreement, signed by DoD and EPA on March 7, 2000 states that "Regulators and other stakeholders will be provided an opportunity for timely consultation, review, and comment on all phases of a removal response, except in the case of an emergency response....." EPA did not receive the Site Investigation Work Plan for Blue and Red Beaches, nor was advised of these investigations, until December 10, 2002, even though field activities commenced on December 2, 2002 and were completed on December 20, 2002.

#### Specific Comments

1. In Section 2.5 (Current and Future Site Use) the statement that "The planned future land use of Red and Blue Beaches is as a wildlife refuge to be managed by DOP" is not fully accurate and must be revised to indicate that in-fact the planned future usage of Red and Blue Beaches is as public recreation beaches, even though located inside the wildlife refuge area. Likewise Section 2.2.2 (Land Use) on page 2-6 and Section 4.2 (Recommendations) on page 4.1 need to be revised to include a discussion indicating that in-fact the planned future usage of Red and Blue Beaches is as public recreation beaches, even though located inside the wildlife refuge area.
2. Also, Section 2.4 (Demographic Profile) needs to be revised to reflect the planned future usage of Red and Blue Beaches as public recreation beaches; rather than be based on the past usage as part of the Navy's property.
3. On page 3-2, the statement "This exceeds EPA's guidance criteria (EPA, 2002) of 85 percent probability of detection at a 90 percent confidence level." However, the cited guidance (EPA, 2002) is not listed in the references given in Section 5.0. The report needs to be revised to include a full listing of the cited guidance (EPA, 2002).
4. On page 3-2 it is stated that "The first phase of the prove-out was conducted at the previously established prove-out area at Solid Waste Management [Unit] (SWMU) 4." The report must be revised to clarify that this is SWMU 4 at the former Naval Ammunition Storage Detachment (NASD) on the west end of Vieques, and not SWMU 4 [Waste Areas of Building 303 at Camp Garcia] as described in the January 2000 Order, applicable to the Navy's facility on the east side of Vieques.

**EQB Comments on the Final Draft Preliminary MEC Site Investigation Report for  
Red and Blue Beaches Eastern Maneuver Area Vieques Island, Puerto Rico Dated  
March 9, 2003**

**Comments Developed April 7, 2003**

**Comment No. 1**

**Page 1-1**

**Section 1.0**

This report uses the term "Munitions and Explosives of Concern (MEC)". However, the work plan for the project uses the term "Ordnance and Explosives/Munitions and Explosives of Concern (OE/MEC)". This creates some confusion since the definitions of OE and MEC are slightly different and it appears from the work plan that the original intention was to address both OE and MEC. Please revert to the original term OE/MEC as specified in the Work Plan.

***Response:***

*The Navy was in a transition phase in terminology during the time the work plan was prepared. The current policy of the Navy is to use the terms Munitions and Explosives of Concern (MEC) and Munitions Constituents (MC). The current terminology will be used for the report.*

**Comment No. 2**

**Page 1-3, 3-8**

**Section 1.2, 3.3**

This section states that the required UXO clearance for land designated as a wildlife refuge is 1-ft bls. However, the clearance depth cited in DoDESB 6055.9-STD is not "required UXO clearance depths" but rather default depths that the individual project managers are encouraged to modify based on site-specific requirements. The fact that these sites are beaches and are subject to erosion and specific civilian use activities indicates that the specific requirements of this investigation should be analyzed to determine a more appropriate investigation depth. This is supported by the fact that 272 identified anomalies out of a total of 763 (36%) (some of them noted to be significant) were not investigated because they were located deeper than 1-ft. and these anomalies may present a hazard to users of this area. Also, OE/MEC burial by troops using the area for ammo transfer is likely to be deeper than 1-ft. and any accidental firing into the beaches by large projectiles are likely to have penetrated deeper than 1-ft. Please analyze the site-specific investigation requirements and consider deeper investigation of the already identified 272 anomalies.

This issue was also raised on the EQB comments on the work plan (Comment # 10 on EQB comments dated December 26, 2003). No response from the Navy was received to these comments.

**Response:**

*The purpose of this investigation was to confirm that no live fire was used. There is no documented live firing on the beaches. DoD 6055.9 STD C12.3.4.3 recommends site specific remediation depths if the type of ordnance used is documented from searching historical documents and interviews. Historical searches and interviews indicate that no live fire was used on the beaches. Therefore, no site specific remediation depth can be determined from historical records. A land use plan has not been developed for East Vieques. The current projected land use is a Wildlife Refuge. The assessment depth used for the planned end use of a Wildlife Preserve is 1 ft (DoD 6055.9 STD C12.3.4.5).*

*The data shows that 239 anomalies out of 768 dug were no finds greater than 12 inches (31 %). The procedure for a one-foot investigation is to stop digging at one foot. There is no evidence of live fire on the beaches. The data shows that 529 items dug up from the beaches were not MEC.*

*There is no documented evidence of burial of munitions at this site also; there is no documented evidence of firing onto the beaches with large projectiles.*

*Deeper investigation of anomalies is not warranted at this time.*

**Comment No. 3**

**Page 3-1**

**Section 3.1.1**

The total area surveyed was 11.7-acres compared to the approximately 20-acres estimated in December 2002. The reason for this area reduction is stated to be erosion. Please explain how this significant amount of erosion could have taken place in such a short time period. Also, please analyze if this amount of erosion has any potential impact on the future exposure (and subsequent uncovering of hazards) of OE/MEC remaining below 1-ft b1s.

**Response:**

*The 20 acres of survey area was estimated from a 1998 aerial map. After inspecting the site in the field, it was noted that much of the Blue Beach east area contained no actual beach to survey. Also, interviews with AFWTF personnel indicated that the amphibious training activities were focused where there was easy access to good roads to move the troops to the artillery areas 3 miles inland. The accessible areas of the beaches were surveyed and the main access roads off the beach were surveyed. The beach areas changed from the 1998 aerial photographs, probably from erosional processes. The vegetation has also encroached on the beach and changed from the 1998 aerial photograph.*

**Comment No. 4**

**Page 3-1**

**Section 3.1.2 and 3.1.3**

The Site Investigation Objective of "subsequent intrusive investigation of each anomaly" was not implemented in the area near the access road to Red Beach ("Selected intrusive sampling of these anomalies", 3.1.3). Please explain why the objective of intrusive investigation of all identified anomalies was not implemented and how this affected the investigation results. This is especially important since this area appears to be the site of an ammo transfer point where deeper burial of OE/MEC is likely to have taken place and identified 269 anomalies were not investigated.

**Response:**

*The scope of the investigation was focused on areas most accessible to the public. The decision was made in the field to investigate all anomalies in the beach area and conduct representative sampling of the equipment laydown and parking area because of the large number of anomalies and the evidence that many were loading lugs. There is no evidence of any MEC from the representative anomalies investigated in the loading area. It is pure conjecture to insinuate that deep burial of OE/MEC was likely to have taken place here.*

**Comment No. 5**

**Page 3-10**

**Section Table 3-2**

This list of recovered military-related items appears to not be complete- For example; Anomaly # 175 from Attachment 1 of the USA Environmental report is identified as "3-in Projo cartridge partial with base expended. ORS. Contact continues past 12 inches." This item is not listed on this table. Also, a partial 3-in projectile in an overall anomaly area that continues deeper than 12-in. should prompt investigation of the deeper anomaly. Also, a signal flare (anomaly #491) is noted in Attachment 1, but not on Table 3-2. Please add these items and any others to the table and investigate the remaining portions of those anomalies that lie deeper than 12-in bls.

**Response:**

*If the item is identified as ORS, it is ordnance-related scrap, not a MEC item, such as a cartridge casing and is not related to the items in Table 3-2. The signal flare may have been from civilian use and may not be military related. At this time, additional investigation of anomalies beyond 12 inches will not be conducted because no evidence of MEC has been found.*

**Comment No. 6**

**Page 3-10**

**Section table 3-2**

Four of the military-related items on this table were anomalies that continued deeper than 12-in and the entire anomaly was not investigated. These anomalies are likely to contain other military objects and possibly OE/MEC. Please either investigate these complete anomalies and the other anomalies that are deeper than 12-in or explain how the public using these sites will not be at risk if these anomalies contain hazardous items including OE/MEC (in other words, analyze the true expected impact depth of reuse instead of relying on the DoDESB 6055.9 STD default depth of 1-ft.).

***Response:***

*No OE/MEC items were found after 768 digs; therefore, no additional intrusive work is recommended for these beaches.*

**Comment No. 7**

**Page 4-1**

**Section 4.1**

The statement that "no MEC is present to a depth of 1 ft bls" is arguable based on the definition of "MEC". Since the work plan used the term "OE/MEC" it is recommend that this term be used in this report. In that case, OE (expended small arms, flares, and a 3 in. projectile) was found on the site.

***Response:***

*The term MEC is the official Navy policy and is correctly used in the report. Small arms, an expended flare, and ORS (a partial 3-inch projectile cartridge with expended base) are not considered MEC.*

**Comment No. 8**

**USA Report**

The report cover letter states, "USA conducted traditional mag and flag operations in areas where NAEVA had data gaps." There is no other mention of this in either the CH2M HILL report or the NAEVA report. Please explain what caused these data gaps, how they affected the investigation quality, and why the shift to "mag and flag" was an appropriate alternative to the requirements of the work plan.

***Response:***

*When the geophysical contractor reviewed mosaic maps from 4 grids (R-06, R-07, R-08, and R-11) they noticed 4 small areas (one in each of the 4 grids) that had a gap in the GPS data. The 4 small data gap areas were outlined using GPS and pin flags and within these 4 small areas, USA Environmental swept the areas with a Minex all-metal detector. Four anomalies were flagged and investigated. All 4 anomalies were aluminum trash. The anomalies are recorded in Appendix B and are anomalies 436-439 in the table.*

**Comment No. 9**

**NAEVA**

**Section 1.0**

This section states that "approximately 74% of the selected targets were reacquired for intrusive investigation." However, the CH2M HILL report states (3.1.2) that "The final site investigation objective was the reacquisition of anomalies identified by the geophysical survey and the subsequent intensive investigation of each anomaly to identify, catalog, and properly dispose of all encountered material." It appears that investigation of all of the identified anomalies was the investigation goal. Please explain why actual investigation of 74% of the anomalies is acceptable? How were the 26% of selected anomalies excluded from investigation?

**Response:**

*The report clearly explains this on page 3-1. All of the 269 anomalies not reacquired are located in the laydown/parking area where lifting lugs and scrap were found. The investigation team sampled a percentage of the anomalies in this area and determined that it was a laydown/parking area. No MEC was found. The focus of the investigation was the main beach areas where the public would have access. All of the selected targets in the beach area were reacquired for intrusive investigation.*

**Comment No. 10**

**NAEVA**

**Section 1.0**

States that 763 targets was selected for intrusive investigation. Based on comment 9 above, does this mean that an additional 26% of anomalies meeting the criteria for investigation were identified but not investigated? Please explain.

**Response:**

No, NAEVA identified 1,036 anomalies. Of these, 269 were not reacquired and were all located in the laydown/parking area of Red Beach East. Representative samples were reacquired from this area and no MEC was found. A total of 768 targets were investigated intrusively (dug). NAEVA identified 764 ( 763 is a typo) targets for investigation and 4 targets were identified by USA Environmental using the Minex, for a total of 768 targets.

**Comment No. 11**

**NAEVA**

**Section 1.0**

Out of the 763 targets selected for investigation, 347 were either "no finds," located under an erosion mat, or deeper than 12-in (as indicated on Attachment 1 of the USA report). This means that 45% of the identified targets was not fully investigated and identified. Add this to the 26% of identified targets that were not reacquired for investigation (see comment #9) and you have approximately 545 identified geophysical targets that were not investigated. Please explain how the Navy can know that hazardous OE/MEC are not located at some of these uninvestigated anomalies especially since some of them are noted in Attachment 1 of the USA report as "very hot contact" (#286) as "Extremely large metal contact encompassing a large area extending deeper than 12 inches"?

**Response:**

*The scope of work was to investigate anomalies to a depth of 12 inches. The scope was adhered to. All of the open beach areas were investigated. In an area of many anomalies that was determined to be a laydown/parking area, a representative number of anomalies were investigated and found to be lifting lugs and garbage. No MEC was found. The purpose of the investigation was to confirm that the beaches were used for amphibious assault training exercises using blank ammunition. This was confirmed with the investigation.*

**Comment No. 12**

**NAEVA**

**Section 12.0**

This section states that CH2M HILL directed NAEVA to eliminate Blue Beach East from the investigation. Please explain why this was done.

**Response:**

*It was determined through visual inspection and interviews with AFWTF personnel, that Blue Beach East is very narrow, with most areas having little if no beach exposed and was not used for amphibious beach landings because of the shallow water, limited beach area, and poor access roads. The amphibious assault training exercises took place at beaches that were large, wide, and had well developed access roads to move equipment and troops to the range areas located up to several miles inland.*

**Comment No. 13**

**NAEVA**

**Section 12.0**

It is unclear what access roads were investigated. The text states "Blue Beach West included the investigation of several access roads connecting the beach itself to the main road that parallels it." And that "CH2M HILL personnel selected the individual access roads to be investigated ... " Please explain if access roads were investigated in addition to those at Blue Beach West. Also, how did CH2M HILL personnel select which access roads would be investigated? Please state whether or not old aerial photos and maps were consulted to determine if other roads, now not serviceable, were used by troops for ordnance transport since these roads, and ammo transfer areas near them, are likely locations for OE/MEC dumping and burial.

***Response:***

*The access roads investigated are shown on Figure 2-2. The main entrance road to Red Beach East, and seven major access roads to Blue Beach West were surveyed. No MEC was found in any of the access roads. The major, well-used roads were selected to be sampled. The 1998 aerial was used to map access roads. The historical archive search, personnel interviews, and results of this investigation all indicate that no live fire occurred on the beaches. There is no historical evidence that MEC was dumped or buried at Red Beach or Blue Beach. And even if it was, the access roads would have been kept clear.*

**Comment No. 14**

**NAEVA**

**Plates 1, 2, and 3**

There don't appear to be any access roads included in the investigation areas depicted in the maps for Red Beach East and West and very minimal access road investigation is depicted on Plate 3 for Blue Beach. Please show a map of which access roads were investigated and explain how they were selected and why this road investigation is adequate considering the access roads are likely ordnance transfer points and likely locations for ordnance dumping or burial.

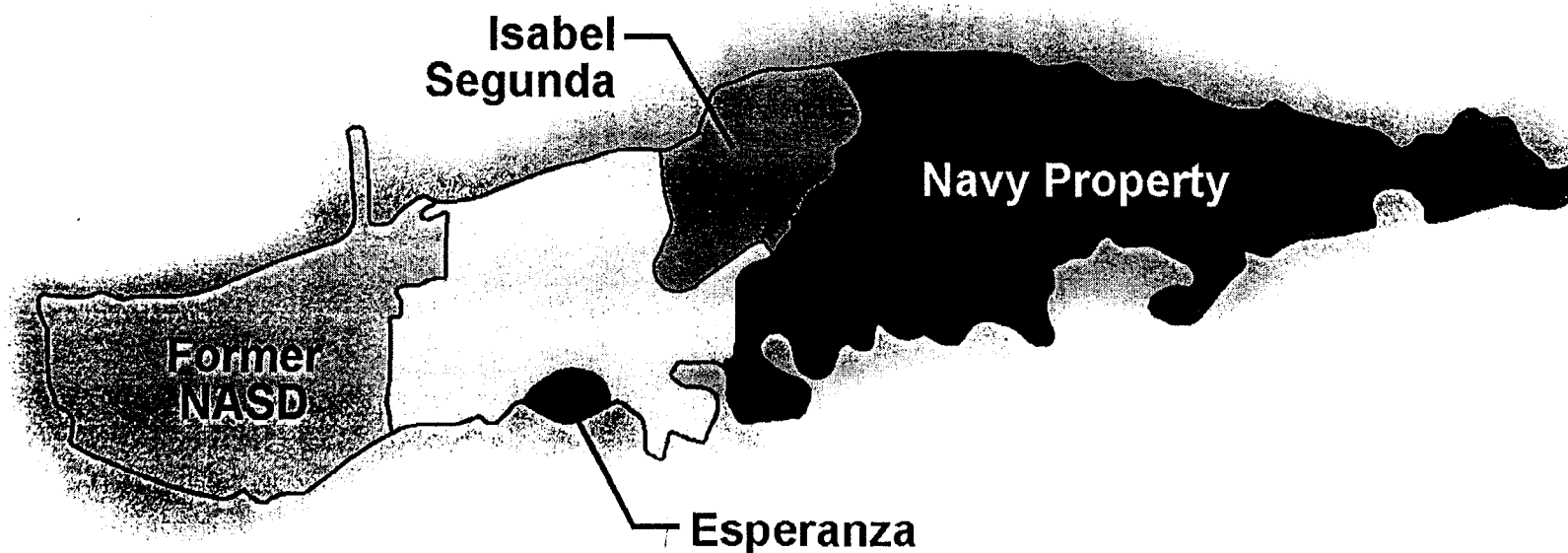
***Response:***

*See response to Comment 13. It is pure conjecture to assume that ordnance dumping and burial was likely at these access roads.*





# Vieques Naval Training Range (VNTR) MEC Assessments



Briefing for Environmental Protection Agency  
and Department of Interior  
April 2003



# Background

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- ◆ Navy and DoI negotiating a MOA for VNTR property transfer by 1 May 2003
- ◆ Navy will form cleanup oversight team with DoI and EPA
- ◆ Draft Final Environmental Baseline Survey and Preliminary Range Assessment for VNTR completed in April
- ◆ Navy will program funds for munitions clearance during FY05 budget preparation



# **VNTR Preliminary Range Assessment (PRA)**

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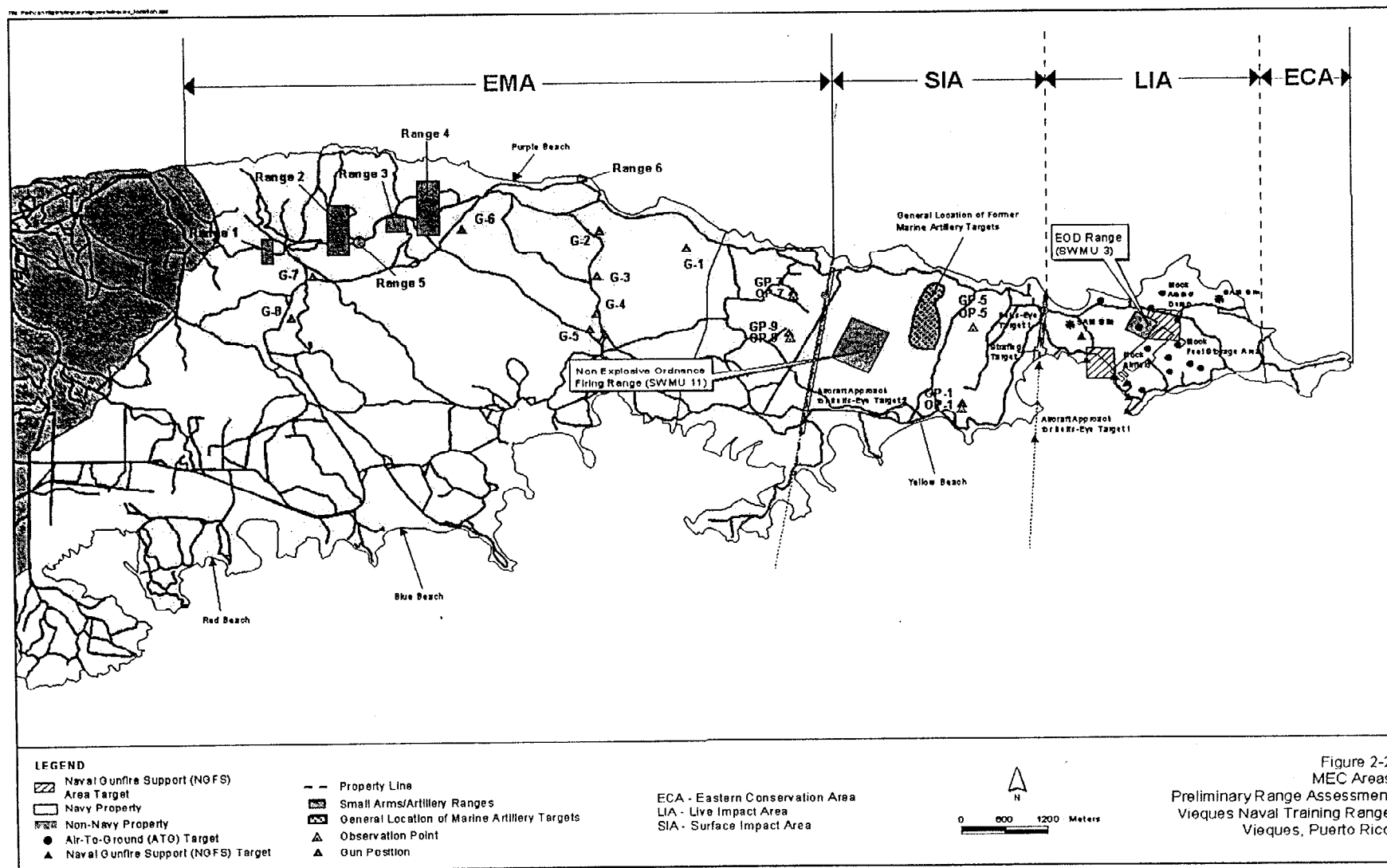


## **◆ Objectives**

- ✓ Provide information on types, quantities and locations (land-based) of munitions and explosives of concern (MEC) at VNTR**
- ✓ Conduct a field reconnaissance at selected MEC areas to identify areas for further action**
- ✓ Identify MEC areas requiring further investigation prior to arriving at decisions for remedial actions**
- ✓ Perform an initial explosives safety risk assessment to provide a preliminary prioritization for future actions**



# MEC Areas identified in PRA





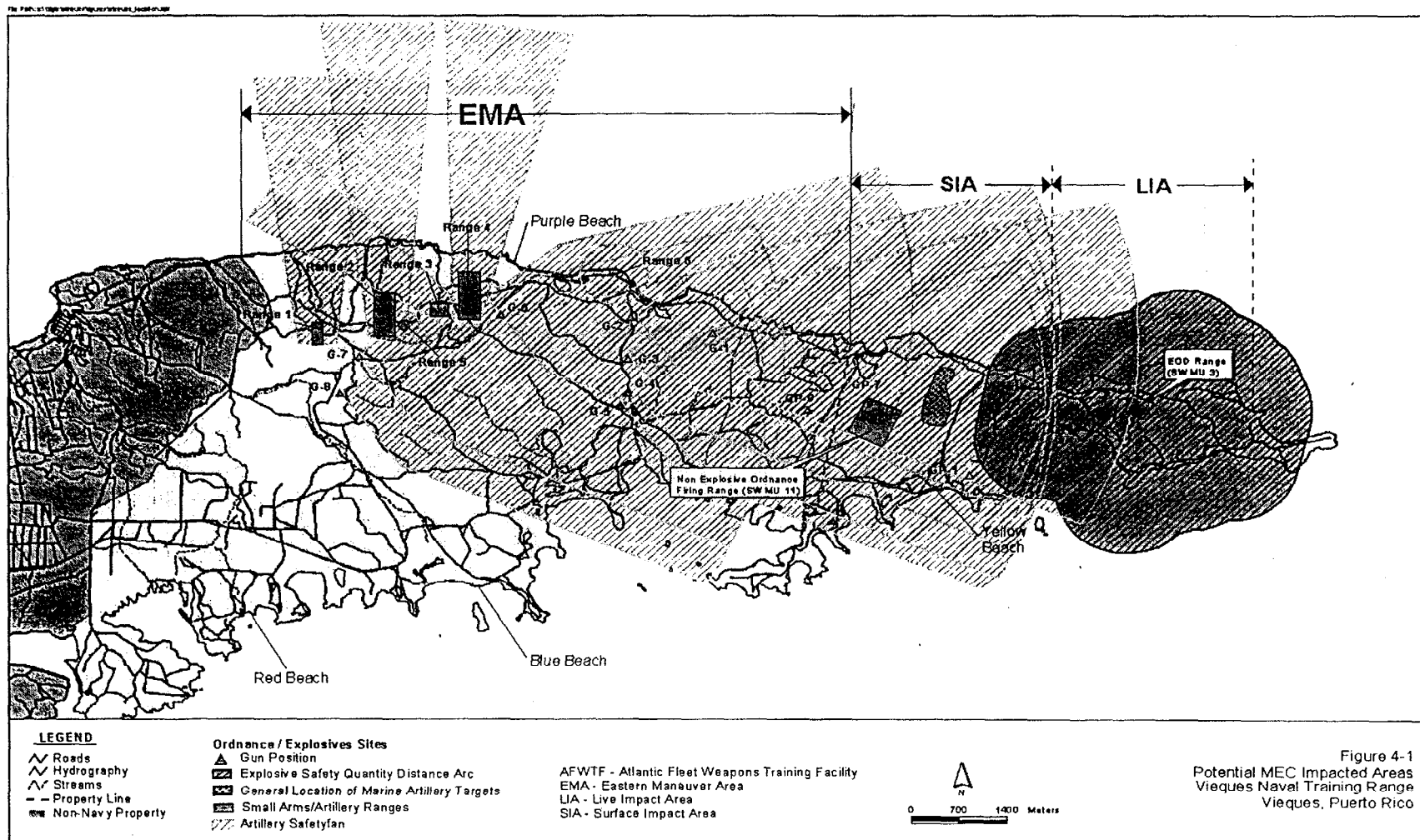
# MEC Areas Identified in PRA

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- ◆ **Live Impact Area (LIA)- 900 acres**
  - ✓ Established in 1964 but not used on a regular basis until 1974
  - ✓ Used for naval gunfire (8 targets), air-to-ground bombing (13 targets) and as an OB/OD Area
- ◆ **Surface Impact Area (SIA)- 2500 acres**
  - ✓ Established in 1954 for marine artillery training
  - ✓ Used as target area for large-scale marine artillery fire (76-175mm) and air-ground bombing with practice/inert bombs
- ◆ **Eastern Maneuver Area (EMA) - 11,070 acres**
  - ✓ Six ranges established in 1966 for practice with small arms fire, grenades, tank artillery, mortar fire and rocket fire
  - ✓ Ten gun positions established for large-scale artillery firing into the LIA and SIA.- MEC areas shown by safety fans
  - ✓ Beach amphibious landings occurred at Red Beach, Blue Beach, Yellow Beach, Purple Beach



# Potential MEC Impacted Areas





# PRA Conclusions Recommendations

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## ◆ Conclusions

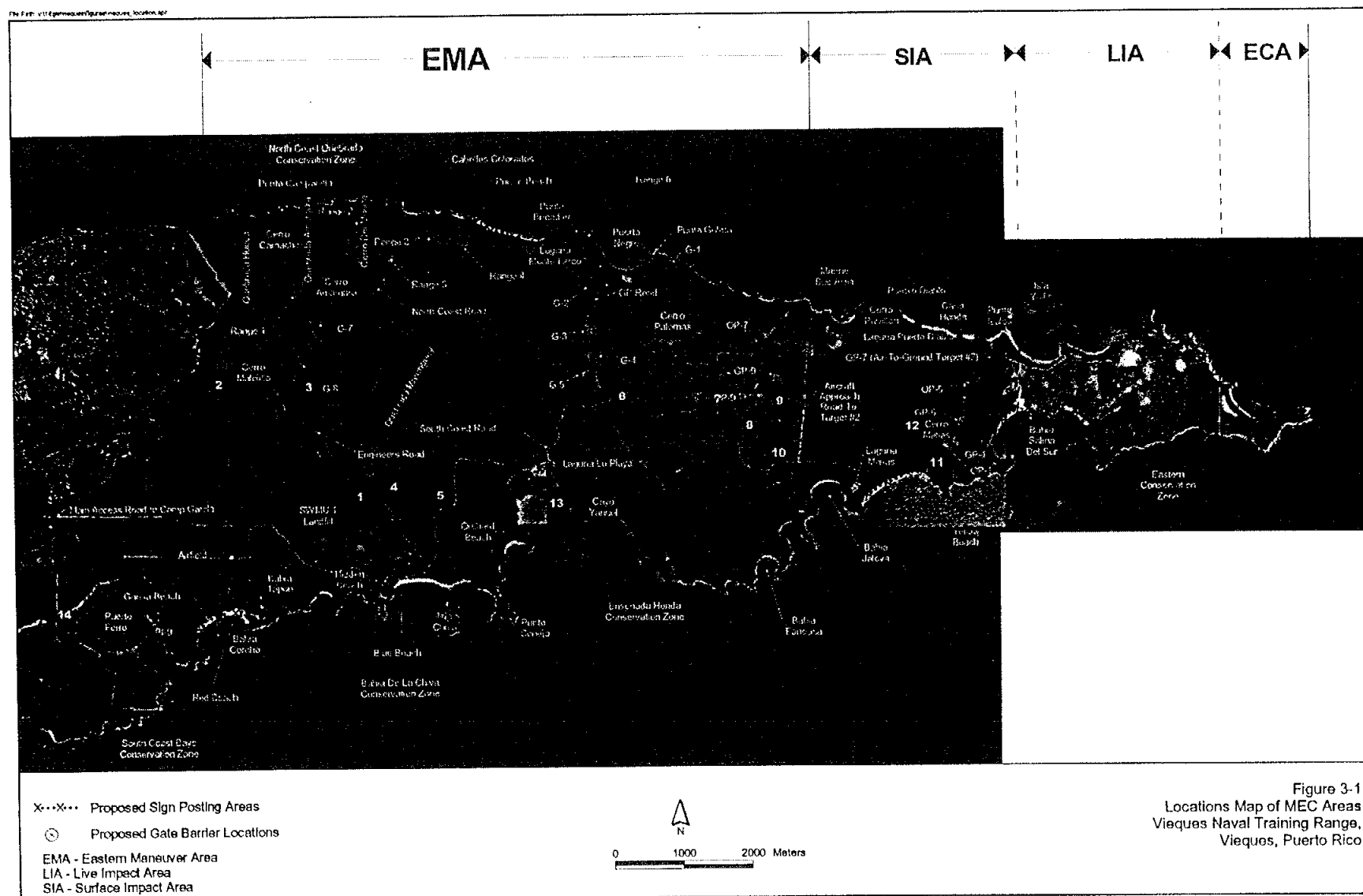
- ✓ Over 40 areas potentially containing MEC were identified
- ✓ High explosive risk areas include the LIA, OB/OD areas
- ✓ Moderate explosive safety risk at artillery gun positions in SIA and EMA; rifle grenade range (Range 3), grenade-launcher range (Range 4) and hand grenade range (Range 5)
- ✓ Low explosive risk at small arms ranges, Red Beach, Blue Beach

## ◆ Recommendations

- ✓ Restrict access to moderate-high risk sites by installing fencing, gates and road barriers
- ✓ Conduct further investigations at all the MEC sites to assess the need for further action



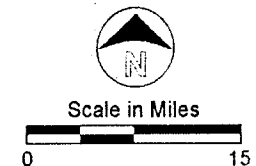
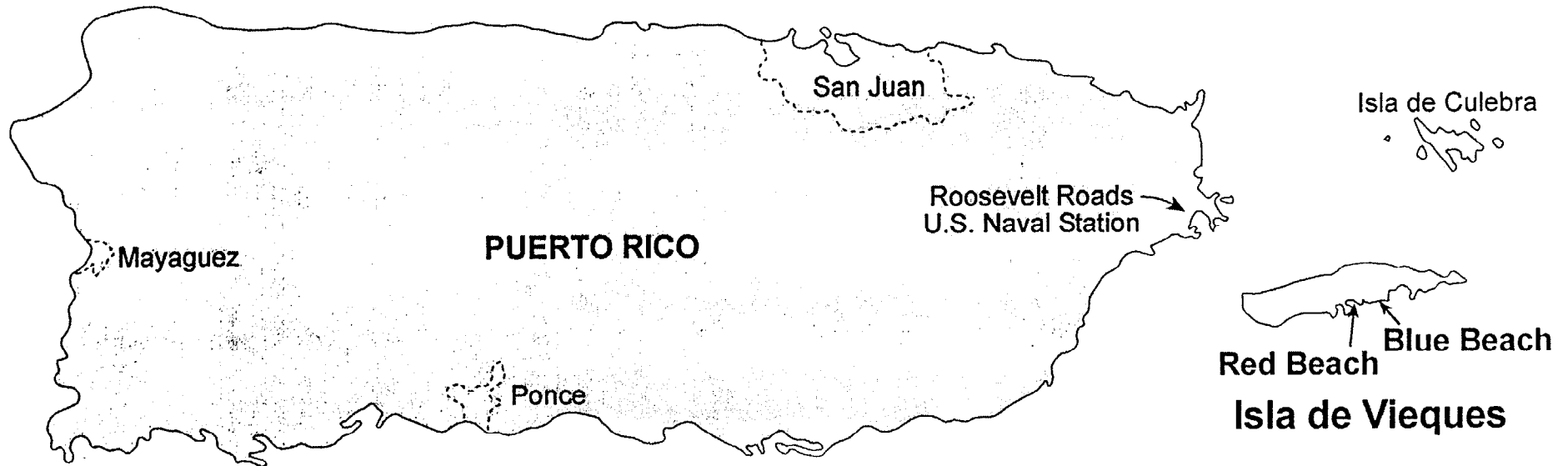
# Locations of Road Barriers and Gates at VNTR







# Location of Red and Blue Beaches





# MEC Investigation of Red and Blue Beaches



## ◆ Objectives

- ✓ Confirm results of historical archive research that indicated that “no live munitions and/or explosives items of concern” were used at the beaches
  - ▲ *Amphibious landings occurred at beaches but training occurred at ranges*
- ✓ Provide a baseline metric for ensuring that all necessary safety measures were appropriately taken in the event that the Department of Interior elects to re-open these two recreational beaches to the public in the future
  - ▲ *Up until 1999 the Navy had, at times allowed public access to the beaches*
- ✓ Conduct a geophysical survey and re-acquisition investigation to remove any metallic materials identified within a one foot depth of the ground surface
  - ▲ *this is the DOD depth requirement for a wildlife refuge*



# Work Plan Revisions 4/24/03

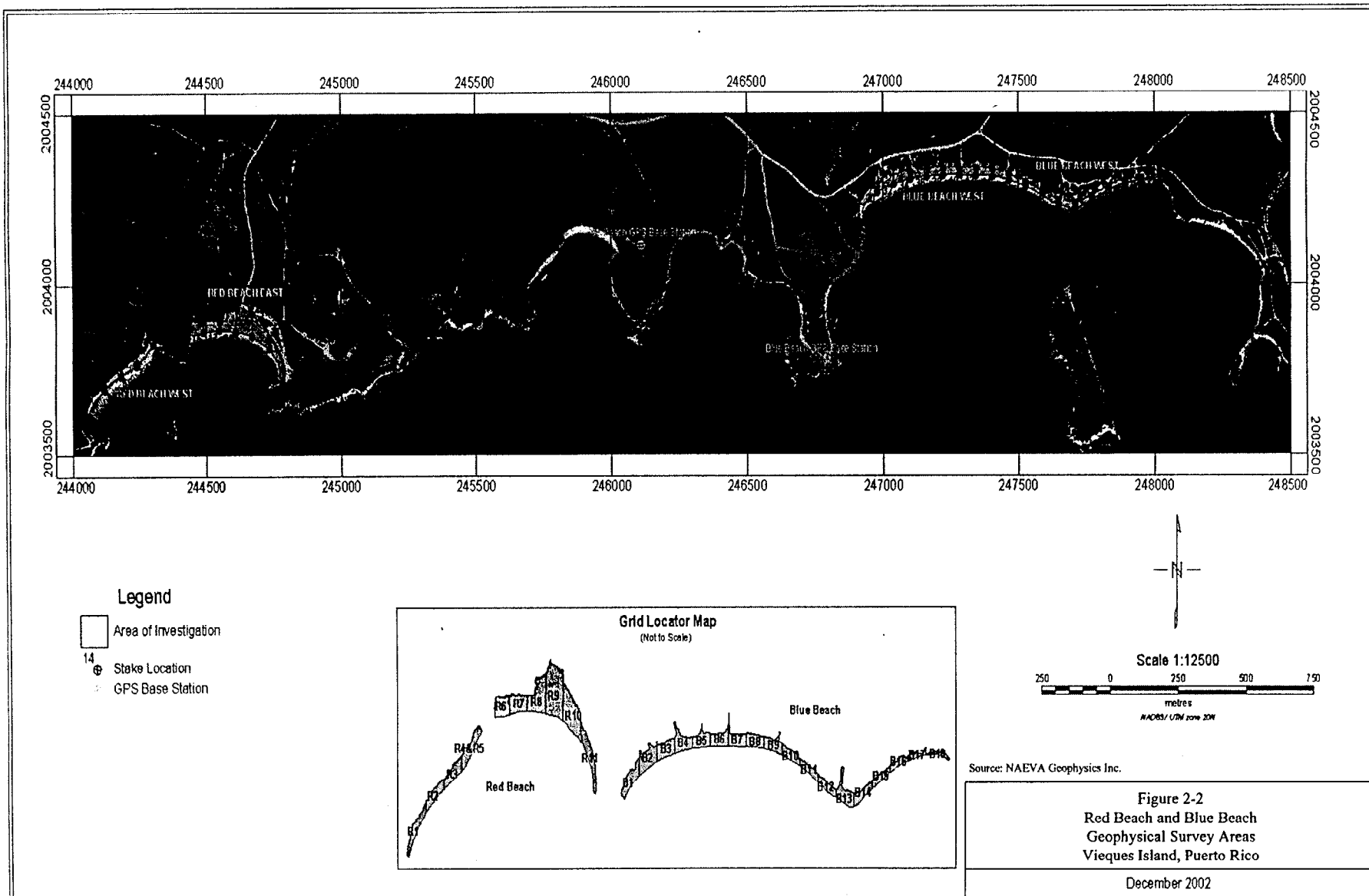
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- ◆ Reacquisition of anomalies below 12 inches
  - ✓ 72 (30%) of 239 anomalies below 12 inches to be recovered
  - ✓ anomalies selected were based on random selection
- ◆ Underwater survey along Blue Beach and Red Beach
  - ✓ Survey completed to a chest-high water depth
  - ✓ Visual survey only, by snorkeling, with no reacquisition
- ◆ Surface clearance of bermed areas



# Area of Red Beach and Blue Beach Investigations





# Summary of Archive Review

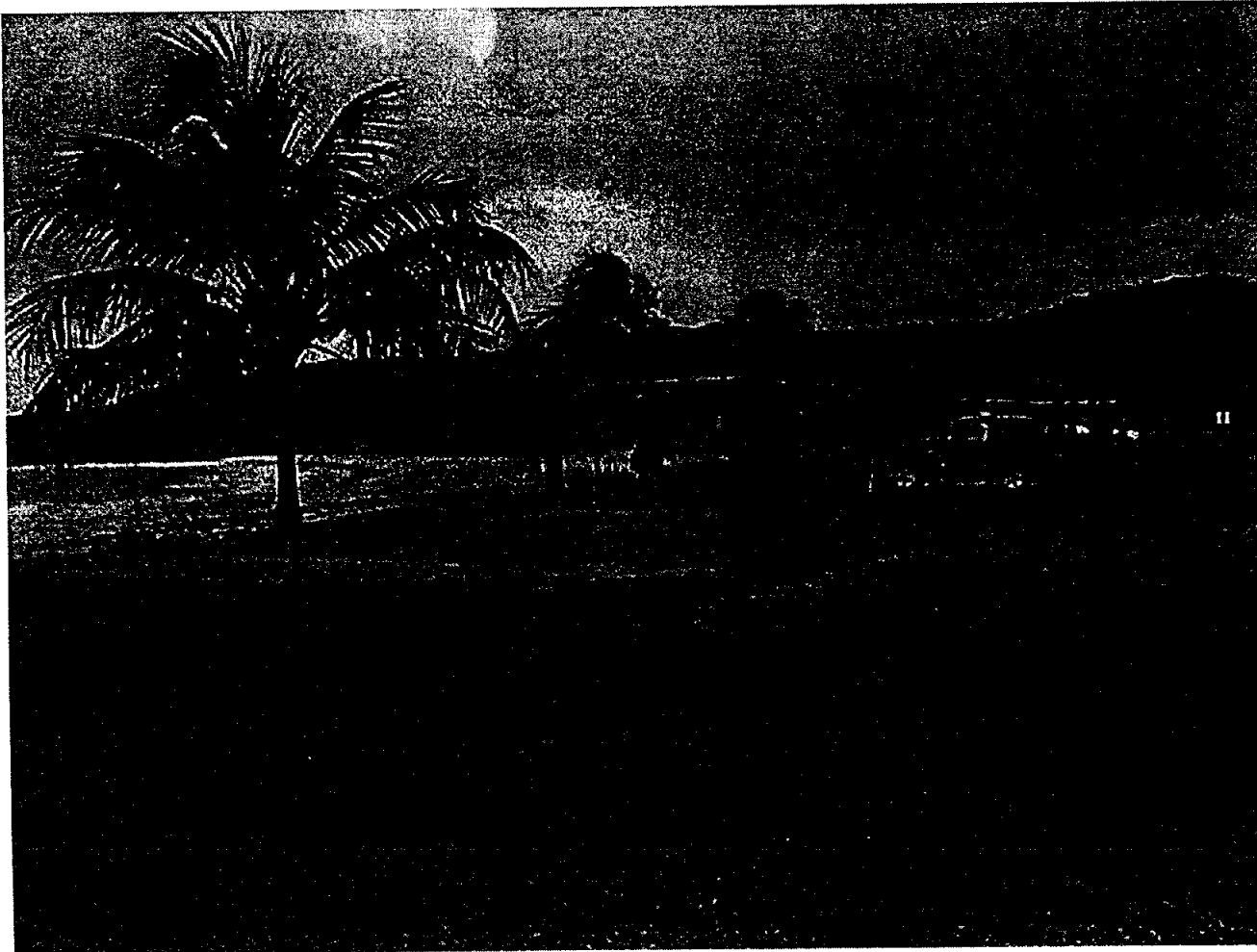
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- ◆ “Blue Beach and Red Beach were utilized for training in amphibious landings” (E &E, 1986)
- ◆ “A typical amphibious landing consisted of a battalion landing team making 2-4 amphibious landings on Blue or Red Beach during a three week period and the troops disembark from ships with their equipment and conduct exercises maneuvering across the EMA.”(TAMS, 1979)
- ◆ “Only blank ammunition was used during these exercises” (TAMS, 1979)
- ◆ All live firing exercises were conducted at the artillery gun positions and ranges, which were located at least two miles north of the beaches



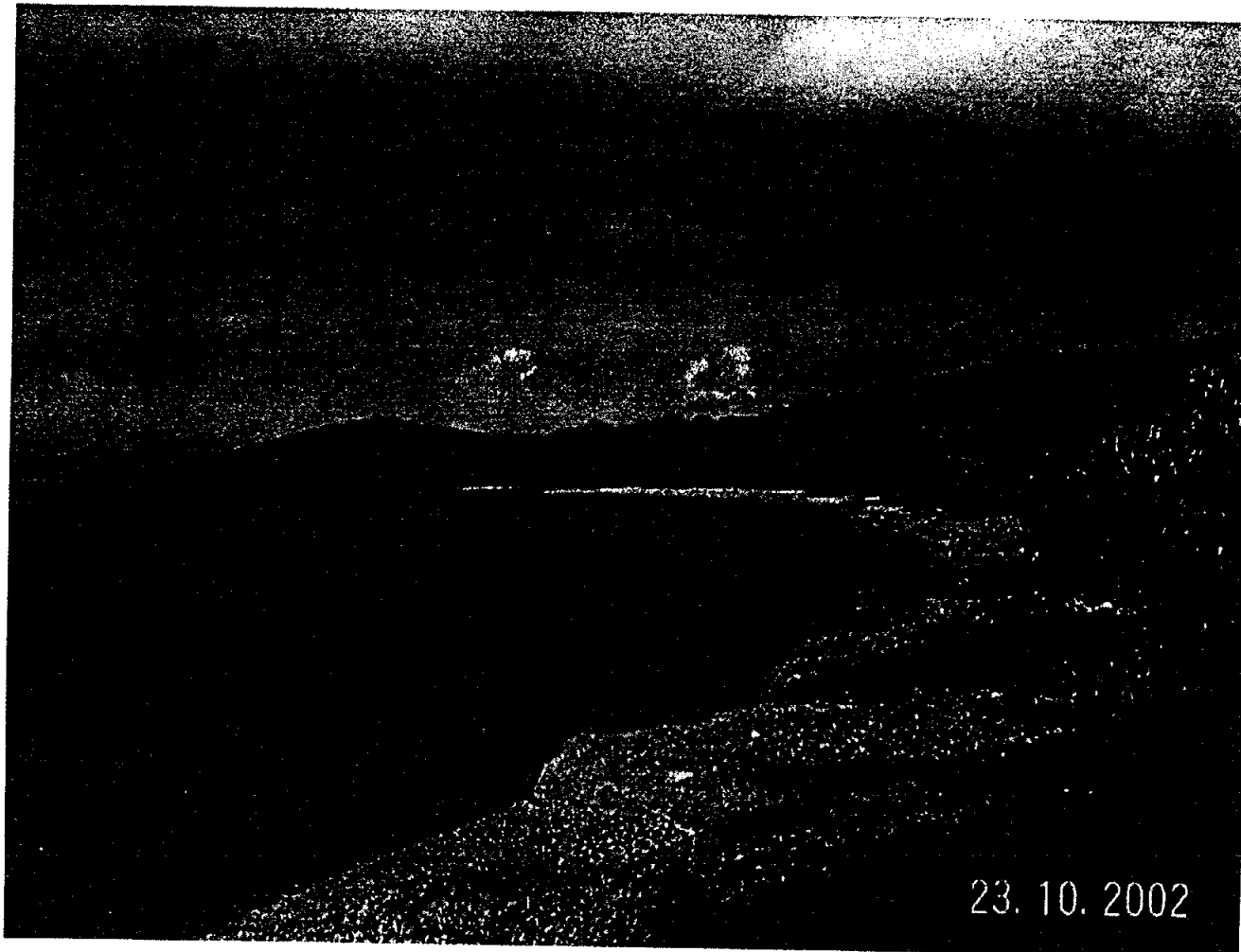
# View of Red Beach



2. Red Beach (facing west).



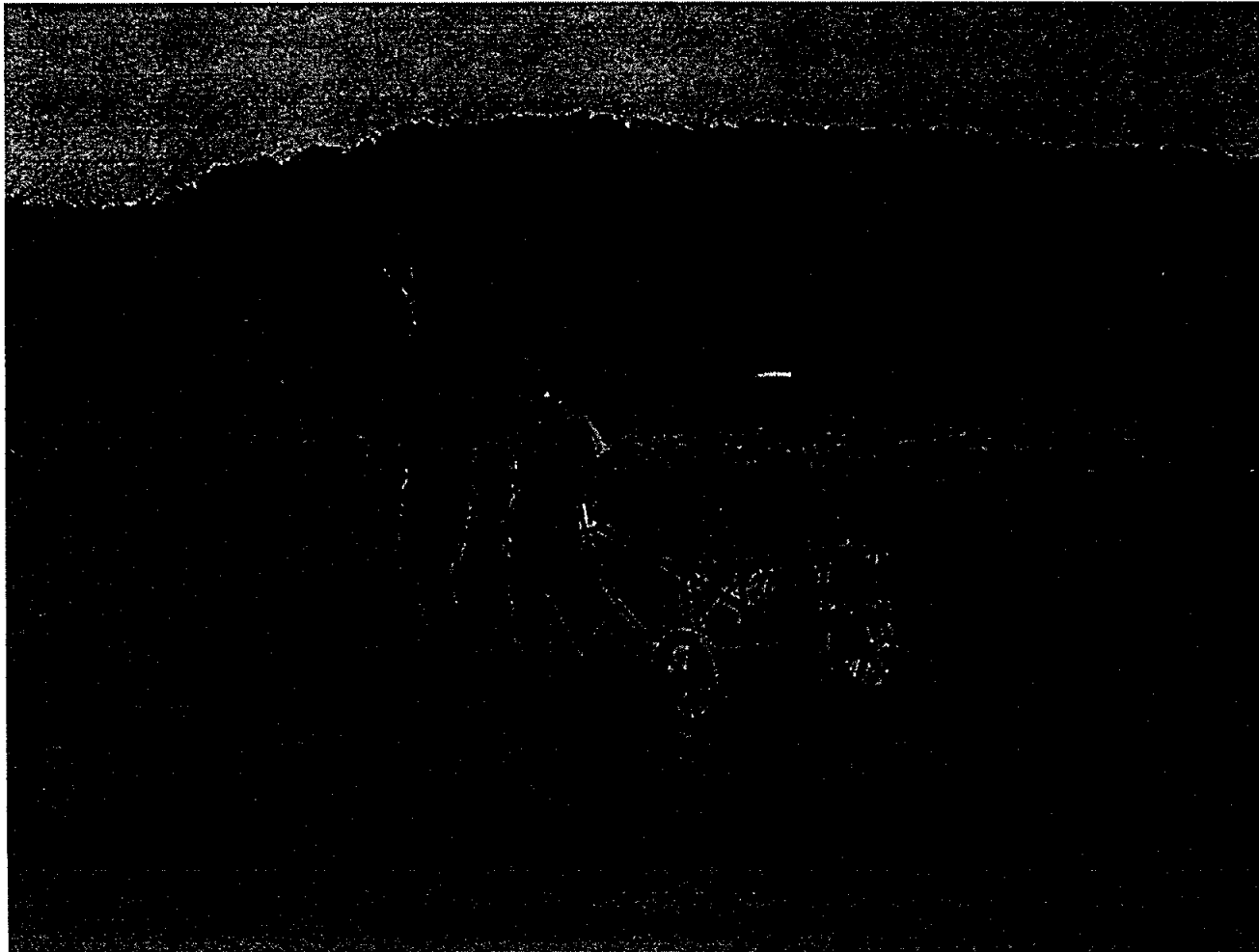
# View of Blue Beach



12. Blue Beach eastern tip.



# Geophysical Survey

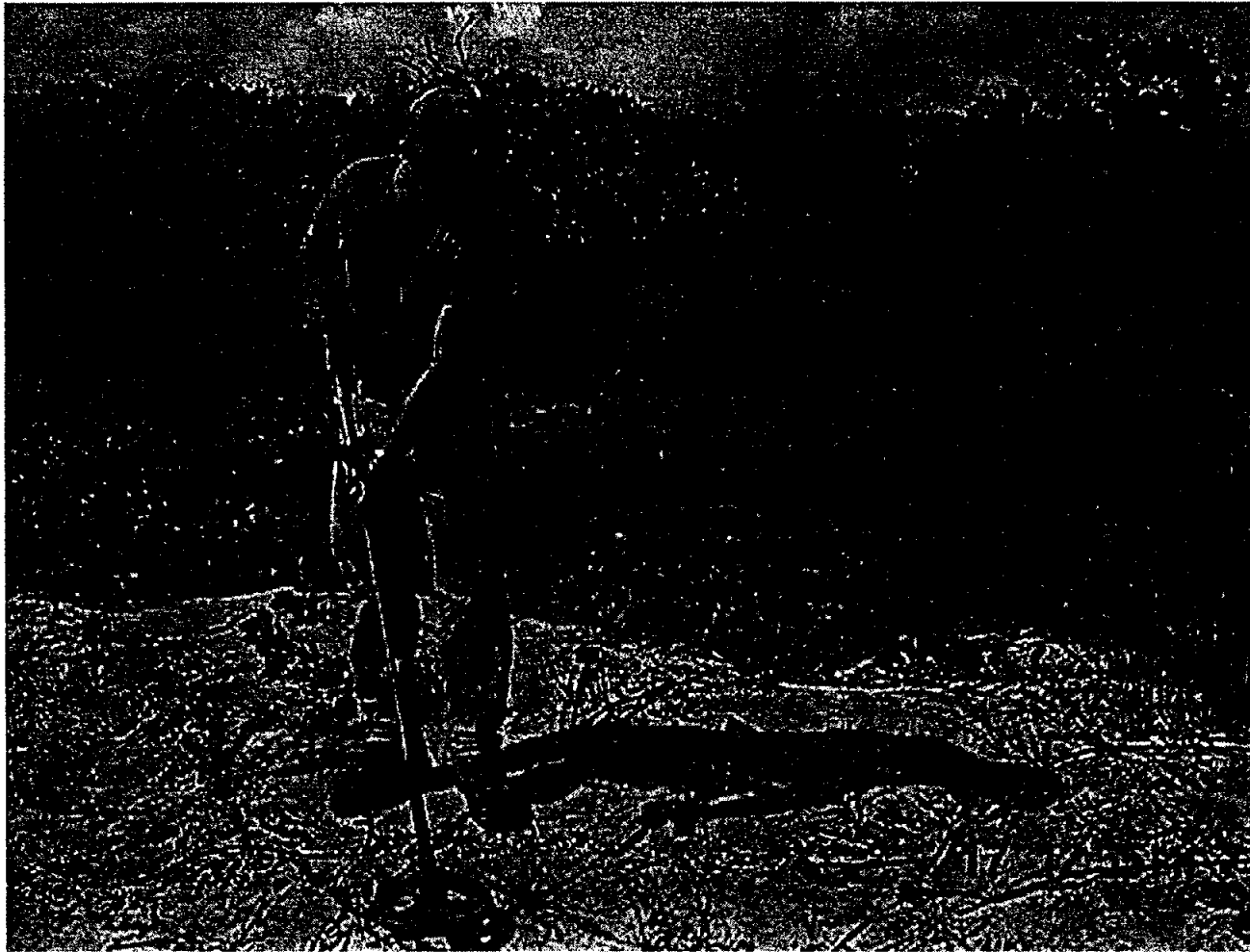


17. Geophysical survey along Red Beach with EM-61 magnetometer and DGPS.





# Recovery of metallic items



15. Anomaly reacquisition with metal detector.



# Locations where MEC related items were identified on Red Beach

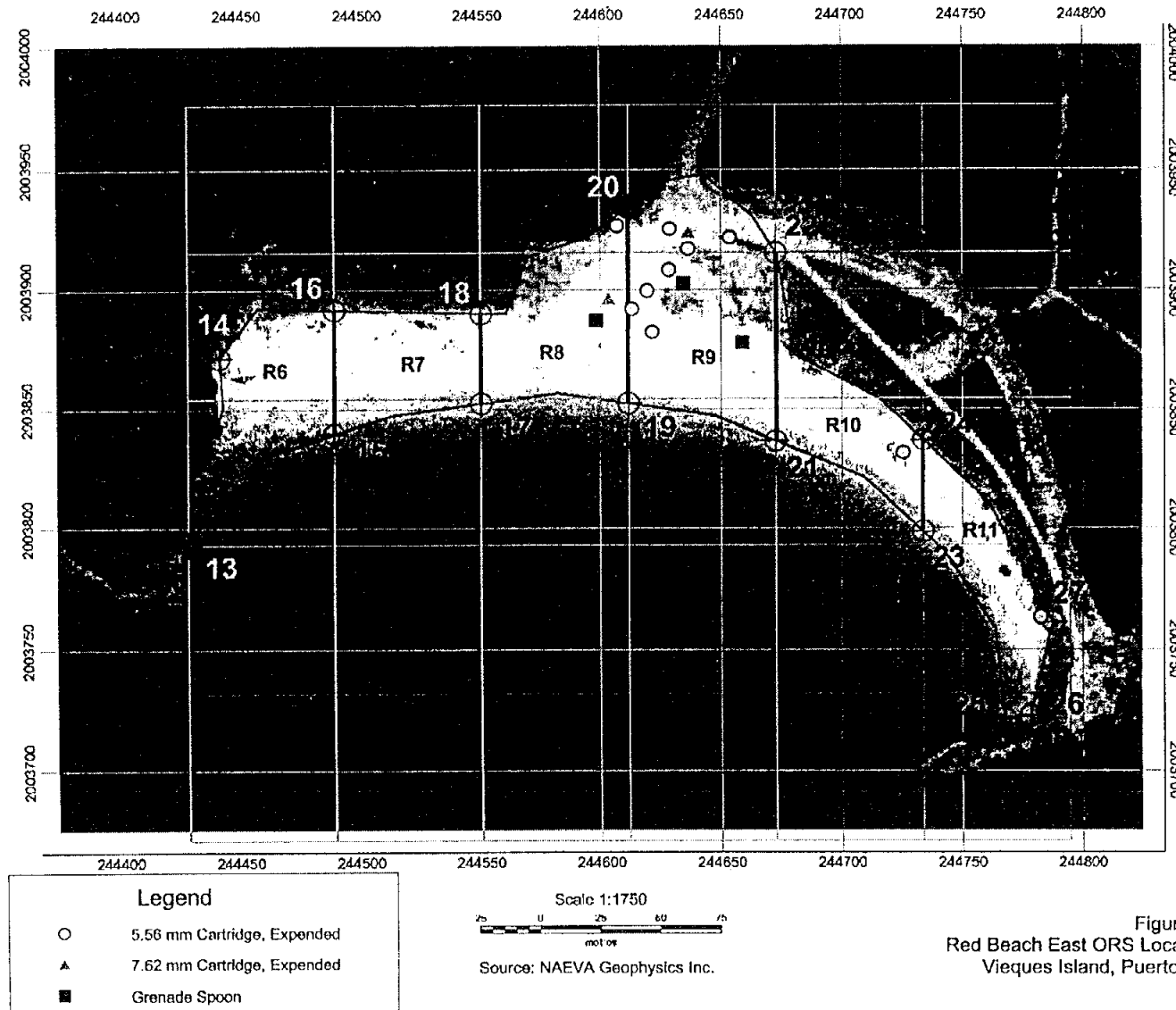
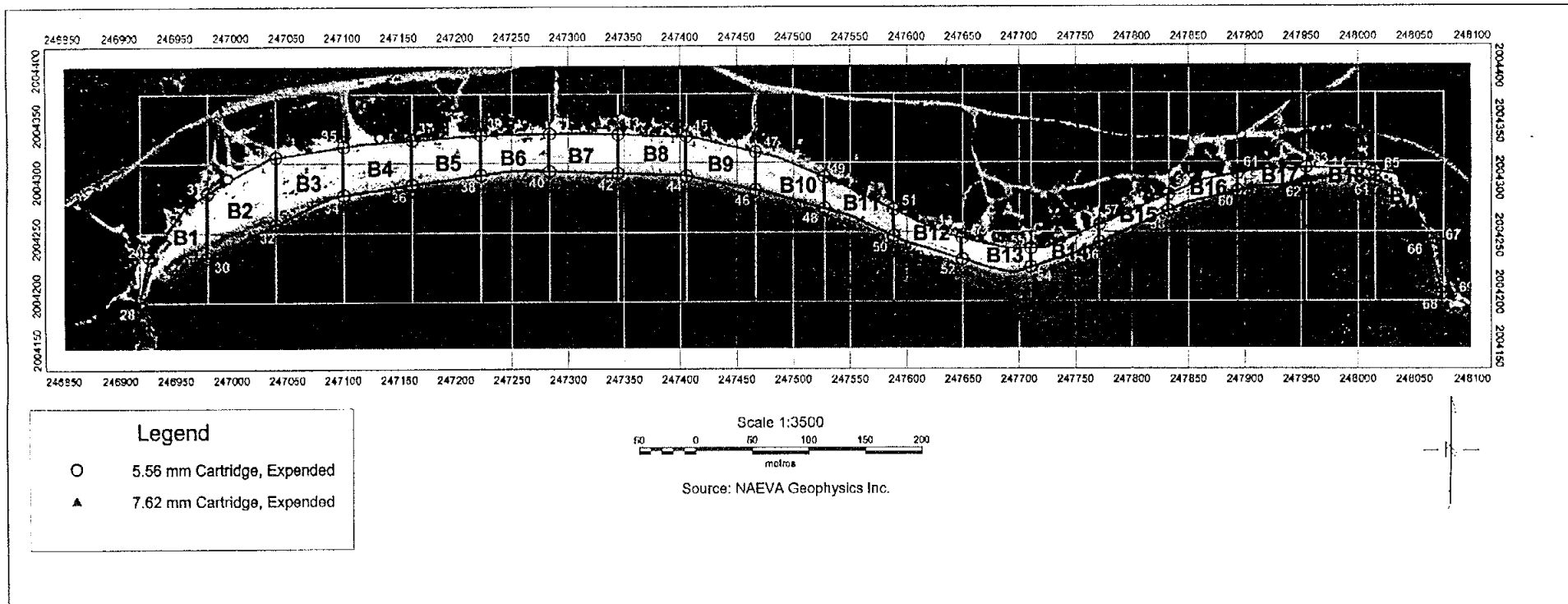


Figure 3-5  
Red Beach East ORS Locations  
Vieques Island, Puerto Rico



# Locations where MEC related items were identified on Blue Beach





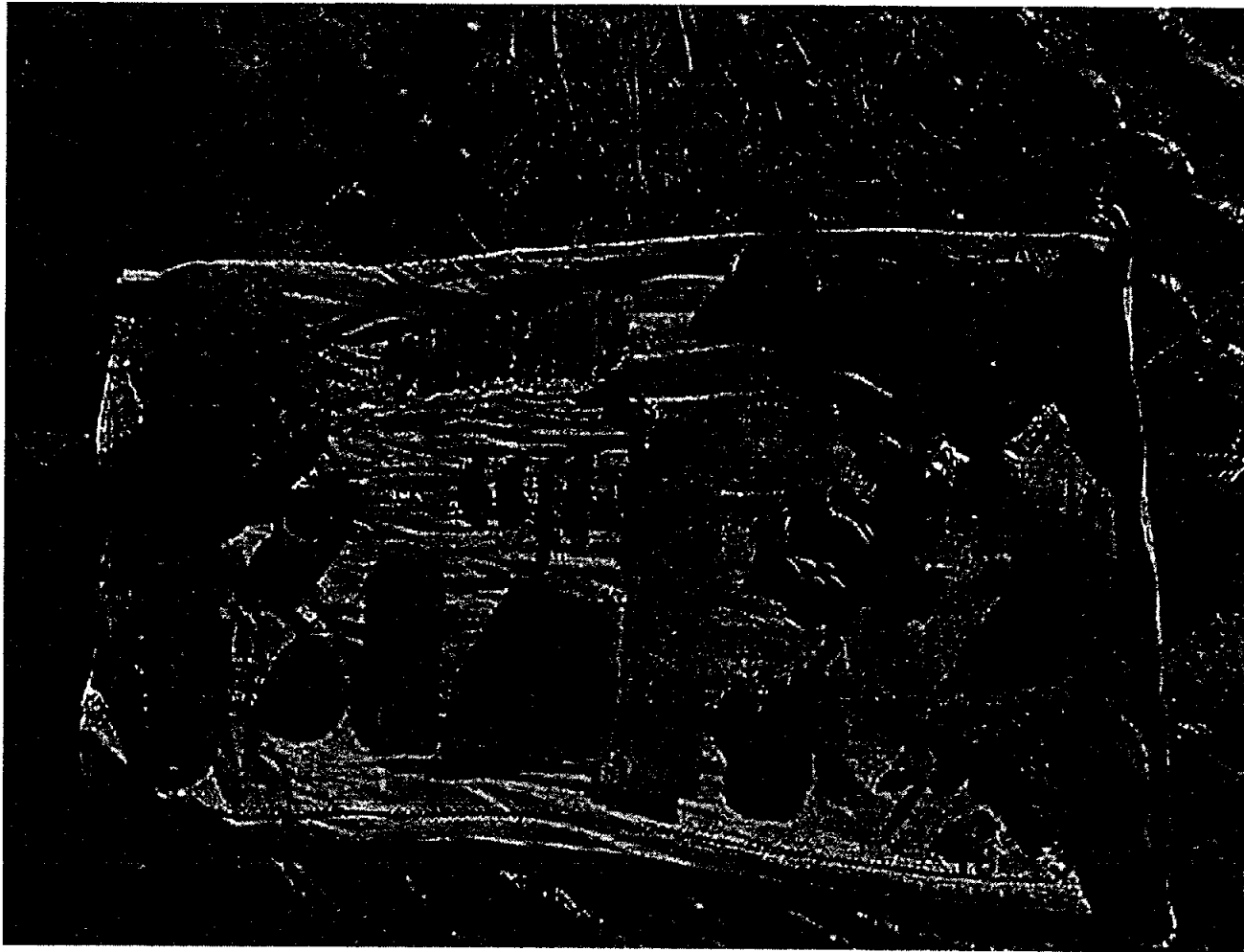
# Non-MEC related metallic items recovered from investigation



21. Ferrous artifacts found (including nails, rebar, and shovel); non-OE scrap.



# MEC related items detected



26. Ordnance-related scrap found.



# Statistics Of MEC Investigations



- ◆ No unexploded ordnance items were detected
- ◆ All metallic items detected within 12 inches were reacquired and removed
- ◆ 1036 metallic anomalies detected, 839 (81%) were reacquired
  - ✓ 767 (74%) anomalies were detected within 12 inches and reacquired
  - ✓ 239 anomalies were detected below 12 inches
    - ▲ **72 of 239 anomalies were reacquired**
  - ✓ 23 of 839 anomalies were MEC related



# MEC Items Recovered

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- ◆ 22 MEC Items recovered
  - ✓ Four 7.62mm machine gun cartridges, blank, expended
  - ✓ Fifteen 5.56mm M-16 cartridges, blank, expended
  - ✓ Three smoke grenade parts
- ◆ All items recovered were less than 20mm and therefore are considered as non-explosive items
- ◆ No projectiles recovered, only blank cartridges



# Summary of MEC Investigation of Red and Blue Beaches



## ◆ Conclusion

- ✓ Investigation confirmed results of historical archive research that indicated that “no live munitions and/or explosives items of concern were detected at Red or Blue beaches.”
  - ▲ *Of the 767 metallic items identified from the geophysical survey and recovered to a depth of one foot, only 22 items were considered MEC related.*
  - ▲ *All the metallic items recovered were non-hazardous and did not require demolition.*
  - ▲ *None of the MEC related items were live ordnance items or posed an unacceptable explosive safety hazard.*
  - ▲ *The MEC related items included: 5.56 mm and 7.62mm expended blank cartridges and fragments of expended smoke grenades*





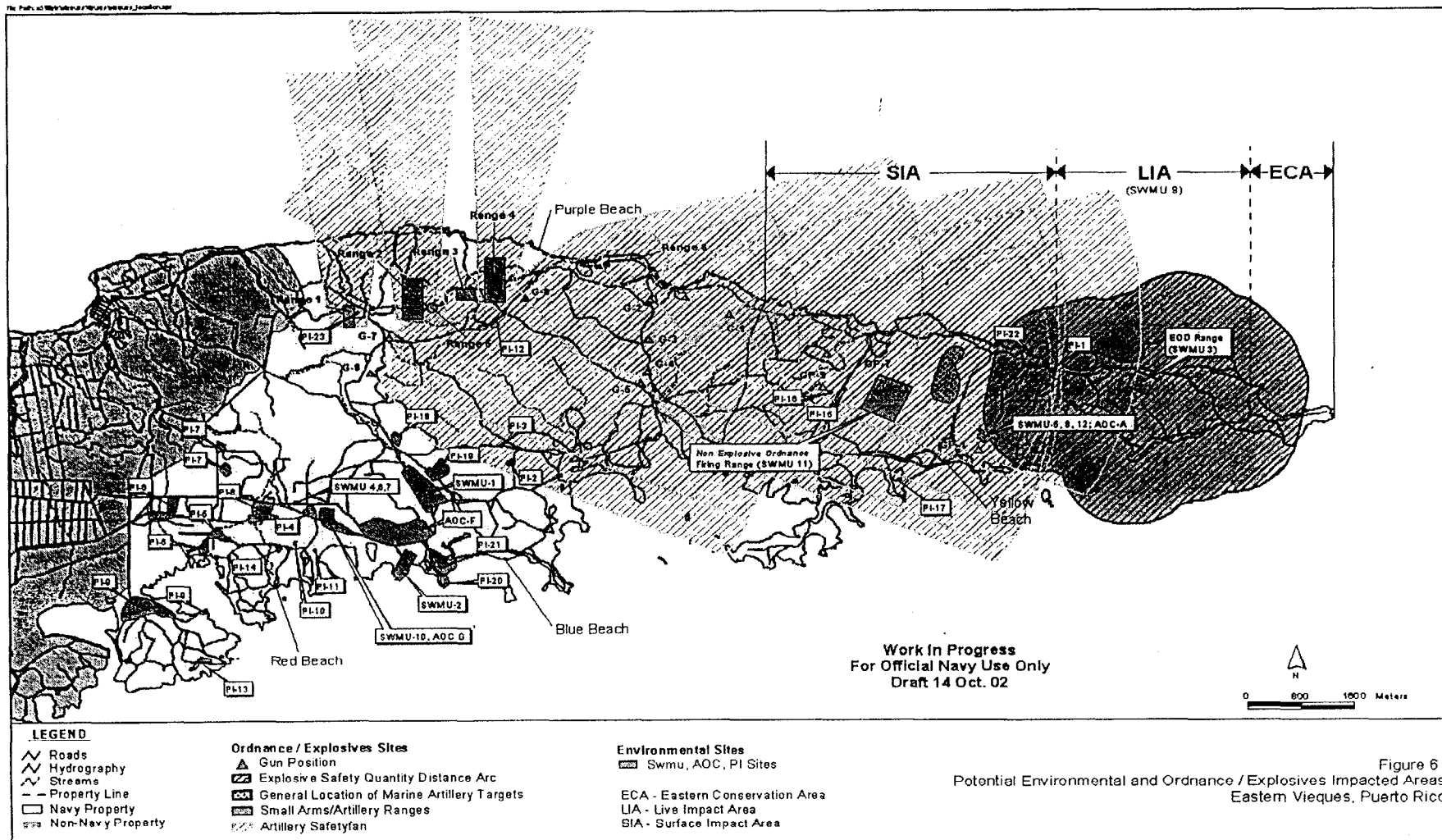
# Backup Slides

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# Potential MEC and Environmental Areas





# VNTR

## Environmental Sites



| Area Name  | Description of Area  |
|--|--|
| *SWMU-1 Camp Garcia Landfill                       | 55-acre landfill used from 1954-1978 for construction debris, scrap metal and food packaging                             |
| SWMU-2 Fuels Off-Loading Site                      | Former location of four 20,000-30,000 ASTs and pipelines used to store diesel fuel and gasoline                          |
| SWMU-4 Waste Area of Building 303                  | Waste areas include a spent battery accumulation area, hydraulic oil catch basin, degreasing basin and waste rag storage |
| SWMU-5 Spent Battery Accumulation Area             | An outside waste battery storage area  |
| SWMU-6 Waste Oil and Paint Accumulation Area       | A storage area for 55-gallon drums of waste oil and paint  |
| SWMU 07 Waste Oil Accumulation Area at Camp Garcia | Vehicle maintenance area used for the storage of 55-gallon drums of waste oil  |
| SWMU 08 Waste Oil Accumulation Area                | Waste accumulation area outside generator building used for the storage of waste oil and lubricants                      |
| *SWMU 10 Sewage Treatment Lagoon                   | Four former unlined lagoons used for the equilization and treatment of domestic wastewater                               |
| SWMU 12 Solid Waste Collection Unit                | A solid waste transfer area used to store domestic trash   |
| AOC A Fuel Fill Pipe Area                          | An area of petroleum stained soil in the vicinity of a diesel fuel UST   |
| AOC F Rock Quarry                                  | A rock quarry where used tires and waste paper were identified   |
| AOC G Pump Station and Chlorination Building       | Pump station and chlorination equipment stored in building next to lagoons   |
| Photo- Identified Areas                            | 23 additional potential sites where aerial photos identified ground scarring and disturbed vegetation                    |

**\*- Sites that are expected to require remedial action**

Note: SWMU is "Solid Waste Management Unit", AOC is "Area of Concern"



# Eastern Vieques Environmental Sites

